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(54) SURFACE ACOUSTIC WAVE DEVICE AND ITS FREQUENCY CHARACTERISTIC ADJUSTMENT METHOD

(57)Abstract:

PURPOSE: To set the center frequency of a surface acoustic wave device to a desired frequency.

CONSTITUTION: An insulating film 20 and a ferromagnetic thin film 21 are formed on a interdigital transducer IDT 15 on a piezoelectric substrate 11. The piezoelectric substrate 11 is mounted on, e.g. a ferromagnetic stem and a static magnetic field is applied to the piezoelectric substrate 11 in the vertical direction. The ferromagnetic thin film 21 and the stem are magnetized permanently by a static magnetic field and the surface pressure of the piezoelectric substrate 11 is increased by the magnetic attractive force. Since the film 21 and the stem are magnetized permanently, the magnetic attractive force is left between the

ferromagnetic thin film 21 and the stem even when they are released from the static magnetic field and the surface pressure of the piezoelectric substrate 11 is adjusted constant at all times. The propagation speed of the surface acoustic wave is changed by the increase in the surface pressure to obtain a desired center frequency.

